OAH Docket No. 2-2500-15828-2
MPUC Docket No. E002/CN-04-76

STATE OF MINNESOTA
OFFICE OF ADMINISTRATIVE HEARINGS
FOR THE MINNESOTA PUBLIC UTILITIES COMMISSION

In the Matter of Application to the Minnesota Public Utilities Commission for a Certificate of Need – Blue Lake Generating Plant Expansion Project

FINDINGS OF FACT, CONCLUSIONS OF LAW AND RECOMMENDATION

The above-entitled matter came on for hearing before Administrative Law Judge Raymond R. Krause on May 17, 2004 at 9:00 a.m. in the County Boardroom, Scott County Government Center, Services Building, Shakopee, Minnesota.

Appearances: Julia Anderson, Office of the Minnesota Attorney General, appeared on behalf of the Department of Commerce ("Department"); Alan R. Mitchell and William Storm appeared on behalf of the staff of the Minnesota Environmental Quality Board ("MEQB"); Michael C. Krikava and Lisa M. Agrimonti, Briggs & Morgan P.A., appeared on behalf of Northern States Power Company d/b/a Xcel Energy ("Xcel Energy" or "Company"); David L. Jacobson, 121 Seventh Place East, Suite 350, St. Paul, Minnesota 55101, appeared on behalf of the staff of the Minnesota Public Utilities Commission ("Commission").

Public hearings were held at the same location at 2 p.m. and 7 p.m. on Monday May 17, 2004. The hearing record closed on May 21, 2004.

Notice is hereby given that, pursuant to Minn. Stat. § 14.61 and the Rules of Practice of the Commission and the Office of Administrative Hearings, that exceptions to this Report, if any, by any party adversely affected, must be filed within 15 days of the mailing date hereof, or earlier date set by the Commission, with the Executive Secretary, Minnesota Public Utilities Commission, 121 Seventh Place East, Suite 350, St. Paul, Minnesota 55101. Exceptions must be specific, and must be stated and numbered separately. Proposed Findings of Fact, Conclusions and Order should be included, and copies thereof must be served upon all parties. Oral argument before a majority of the Commission will be permitted to all parties requesting such argument who are adversely affected by the Administrative Law Judge's recommendation. Such request must accompany the filed exceptions, and an original and 15 copies of each document must be filed with the Commission.

The Commission will make the final determination of the matter after the expiration of the above-set forth period for filing exceptions, or after oral argument, if such is requested and had in the matter.

Further notice is hereby given that the Commission may, at its own discretion, accept or reject the Administrative Law Judge's recommendation and that said recommendation has no legal effect unless expressly adopted by the Commission as its final order.

STATEMENT OF ISSUE

Should the Commission issue a Certificate of Need to Xcel Energy for the construction of two simple cycle, natural gas-fired, combustion turbine generators at the Blue Lake Generating Plant and a double-circuit, 230/115 kV line to connect an existing 230 kV line between the Black Dog and McLeod County substations to the Blue Lake Substation? The double-circuit transmission line could also be considered an associated facility under Minn. Stat. §216B.2421 subd. 2 (1).

Based upon all of the proceedings herein, the Administrative Law Judge makes the following:

FINDINGS OF FACT

Applicant and Procedural History

1. Xcel Energy is a public utility under the laws of the State of Minnesota. Xcel Energy and its parent public utility holding company are headquartered in Minneapolis, Minnesota. Xcel Energy has 1.5 million electricity customers in its upper Midwest service territory. That territory includes parts of Minnesota, Wisconsin, Michigan, North Dakota and South Dakota. Xcel Energy owns and operates 22 electric generation facilities serving this territory using a variety of technologies and fuels including coal, oil, natural gas, hydro, refuse derived fuel, and nuclear.[1]

2. On January 16, 2004, Xcel Energy submitted its Certificate of Need Application ("Certificate of Need Application"). In the Certificate of Need Application, the Company sought Commission authority to construct two new simple cycle natural gas fired combustion turbine generators ("CTGs") at the Blue Lake Generation Plant ("Plant") and to build a new 230/115 kV transmission line approximately 4,000 feet long that is necessary to interconnect the plant to the transmission system. (The two new CTGs and the transmission line will be referred to collectively as "the Project").[2]

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[1] PUC Exhibit 1, Certificate of Need Application, p. 2-1. References to the record are provided for the convenience of the Commission and its Staff. Reference to one record citation to support a particular finding does not mean that is the only support for the finding in the record. Each exhibit citation has the additional description of PUC or MEQB. These descriptors were added to clarify whether the exhibit was received in the Commission proceeding or the parallel Minnesota Environmental Quality Board proceeding.

[2] PUC Exhibit 1, filing letter.

3. A copy of the summary of the Certificate of Need Application was served on the Office of the Attorney General, on each person in Xcel Energy's applicable general service list, and on those persons who were parties to Xcel Energy's last general rate case or incentive plan proceeding. Notice was also provided in accordance with Minn. Rule 7849.0230, subp. 1 (which requires distribution of a Draft Environmental Report).

4. Minnesota Rule 7829.2500 Subpart 5 requires the applicant to publish notice of the filing of its Certificate of Need Application in newspapers of general circulation throughout the state. Xcel Energy published display ads announcing the filing of the Certificate of Need Application in local newspapers.[3]

5. On February 18, 2004, the Commission issued an "Order Extending Completeness Review Period."

6. On February 18, 2004, Xcel Energy supplemented its Certificate of Need Application with additional materials.[4]

7. On March 17, 2004, the Commission issued its "Order Finding Application Substantially Complete and Referring Matter to the Office of Administrative Hearings" for a contested case proceeding. Also on March 17, 2004, the Commission issued its "Notice and Order for Hearing."

8. The Administrative Law Judge held a pre-hearing conference on April 8, 2004, at the Commission's offices, 121 E. Seventh Place, St. Paul, Minnesota.

9. On April 13, 2004, the Administrative Law Judge issued a pre-hearing order establishing a service list ("OAH Service List") and schedules for testimony, intervention, and hearing. On that date, Northern Natural Gas petitioned to intervene in the docket.

10. On April 26, 2004, the ALJ granted intervention to Northern Natural Gas. No other parties petitioned for intervention.

11. On April 30, 2004, the EQB staff submitted the pre-filed testimony of William Cole Storm.

12. Also on April 30, 2004, Xcel Energy submitted the pre-filed testimony of James Alders, David L. Eves, Steven K. Hjermstad, Stephen F. LaCasse, and Pamela J. Rasmussen and served copies of that testimony upon each party on the OAH Service List.

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[3] Tr. at 67-68. The Affidavits of Publication had not been returned to Xcel before the close of the record. Those Affidavits may be submitted to the Commission for inclusion in the record of this matter.

[4] PUC Exhibit 2, Xcel Energy Application Supplement (Feb. 18, 2004).

13. On May 14, 2004 the Minnesota Department of Commerce ("Department") submitted the prefiled testimony of Jason Bonnett, Hwikwon Ham, and Stephen Rakow. The Department's testimony outlined the analysis of the application undertaken by the Department's witnesses. These witnesses addressed numerous issues and made a number of refinements to the Company's proposal. The Department's prefiled testimony includes the overall recommendation that the Certificate of Need should be granted.

14. The hearing was held in this matter on May 17, 2004 in Shakopee, Minnesota. The prefiled testimony of the parties was admitted into the evidentiary record. Witnesses who submitted prefiled testimony were available for cross-examination. No member of the public offered testimony during the public hearing portions of the proceeding.

Applicable Statutory and Rule Criteria

15. Minn. Stat. § 216B.243, subd. 2, prohibits construction of a large energy facility in Minnesota without first obtaining a Certificate of Need from the Commission. The definition of a large energy facility includes any electric power generating plant with a capacity of 50 MW or more and any high voltage transmission line with a capacity of 200 kilovolts or more.[5] The Applicant proposes to construct two simple cycle, natural gas-fueled CTGs at the Blue Lake Generating Plant in Shakopee, Minnesota which would provide approximately 320 MW of capacity. Xcel Energy also proposes to build a double-circuit, 230 kV/115 kV line approximately 4,000 feet long. Accordingly, the proposed facilities require a Certificate of Need from the Commission.

16. Minn. Stat. § 216B.243 and Minn. Rules parts 7849.0010 through 7849.0400 set forth the criteria that must be met to establish need for proposed large energy facilities. Minn. Rule 7849.0120 provides that a Certificate of Need must be granted to the applicant if:

> a. the probable result of denial would be an adverse effect upon the future adequacy, reliability, or efficiency of energy supply to the applicant, to the applicant's customers, or to the people of Minnesota and neighboring states, considering:
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> (1) the accuracy of the applicant's forecast of demand for the type of energy that would be supplied by the proposed facility;
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> (2) the effects of the applicant's existing or expected conservation programs and state and federal conservation programs;
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> (3) the effects of promotional practices of the applicant that may have given rise to the increase in the energy demand, particularly promotional practices which have occurred since 1974;

[5] Minn. Stat. § 216B.2421, subd. 2.

(4) the ability of current facilities and planned facilities not requiring certificates of need to meet the future demand; and

(5) the effect of the proposed facility, or a suitable modification thereof, in making efficient use of resources;

b. a more reasonable and prudent alternative to the proposed facility has not been demonstrated by a preponderance of the evidence on the record, considering:

(1) the appropriateness of the size, the type, and the timing of the proposed facility compared to those of reasonable alternatives;

(2) the cost of the proposed facility and the cost of energy to be supplied by the proposed facility compared to the costs of reasonable alternatives and the cost of energy that would be supplied by reasonable alternatives;

(3) the effects of the proposed facility upon the natural and socioeconomic environments compared to the effects of reasonable alternatives; and

(4) the expected reliability of the proposed facility compared to the expected reliability of reasonable alternatives;

c. by a preponderance of the evidence on the record, the proposed facility, or a suitable modification of the facility, will provide benefits to society in a manner compatible with protecting the natural and socioeconomic environments, including human health, considering;

(1) the relationship of the proposed facility, or a suitable modification thereof, to overall state energy needs;

(2) the effects of the proposed facility, or a suitable modification thereof, upon the natural and socioeconomic environments compared to the effects of not building the facility;

(3) the effects of the proposed facility, or a suitable modification thereof, in inducing future development; and

(4) the socially beneficial uses of the output of the proposed facility, or a suitable modification thereof, including its uses to protect or enhance environmental quality; and

d. the record does not demonstrate that the design, construction, or operation of the proposed facility, or a suitable modification of the facility, will fail to comply with relevant policies, rules, and regulations of other state and federal agencies and local governments.

17. Many of the statutory criteria have been codified in the Commission's Certificate of Need rules. The Project meets all of the statutory criteria. The Project will:

a. meet Xcel Energy's forecasted energy demand during peak periods and associated reserve capacity requirements;[6]

b. use a technology that is commercially proven at the several-hundred megawatt scale that can be placed in service in time to provide electricity for the 2005 summer peak season;[7]

c. enhance electrical system reliability by ensuring Xcel Energy can meet its anticipated system peak demand and meet the MAPP reserve requirements which are designed to ensure continued reliability of the electrical system when that system is stressed;[8]

d. meet demand not arising as a result of promotional activities,[9] and meet demand not eliminated by existing or additional conservation measures;[10]

e. minimize environmental and community impacts by leveraging existing generation infrastructure and using efficient and environmentally-friendly technology;[11]

f. enhance ratepayer value and reduces ratepayer risks by implementing the lowest cost feasible alternative and maximizing utility of existing infrastructure while benefiting the area community;[12] and

g. present the most reasonable alternative available to meet the identified need, be in the public interest, and be consistent with the policies, rules, and regulations of other governmental agencies.[13]

18. Minn. Stat. § 216B.243, subd. 3(a), requires a demonstration by the applicant:

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[6] Minn. Stat. §216B.243, subd. 3(1) and 3(2).

[7] Minn. Stat. § 216B.243, subd. 3(2) and (3).

[8] Minn. Stat. §216B.243, subd. 3(3) and (5).

[9] Minn. Stat. §216B.243, subd. 3(4).

[10] Minn. Stat. § 216B.243, subd. 3(2).

[11] Minn. Stat. §216B.243, subd. 3(5).

[12] Minn. Stat. §§ 216B.243, subds. 3 and 3a, and 216B.2422, subd. 4.

[13] Minn. Stat. §216B.243, subds. 3(6), 3(7), 3(8), and 3a.

that an applicant has explored the possibility of generating power by means of renewable energy sources and has demonstrated that the alternative selected is less expensive (including environmental costs) than power generated by a renewable energy source.

Hydropower, wind, solar, geothermal and biomass are among the renewable energy resources that Xcel Energy must explore in making its demonstration. The Project satisfies the renewable resources criteria of Minn. Stat. § 216B.243, subd. 3(a).

19. Minn. Stat. § 216B.1694 requires that the Commission consider innovative energy projects before approving a new fossil-fuel-fired generation such as the CTGs proposed in this proceeding. The statute provides, in relevant part:

a. Subdivision 1. Definition. For the purposes of this section, the term "innovative energy project" means a proposed energy-generation facility or group of facilities which may be located on up to three sites:

(1) that makes use of an innovative generation technology utilizing coal as a primary fuel in a highly efficient combined-cycle configuration with significantly reduced sulfur dioxide, nitrogen oxide, particulate, and mercury emissions from those of traditional technologies;

(2) that the project developer or owner certifies is a project capable of offering a long-term supply contract at a hedged, predictable cost; and

(3) that is designated by the commissioner of the iron range resources and rehabilitation board as a project that is located in the taconite tax relief area on a site that has substantial real property with adequate infrastructure to support new or expanded development and that has received prior financial and other support from the board.

b. Subd. 2. Regulatory incentives. (a) An innovative energy project:

* * *

(5) shall, prior to the approval by the commission of any arrangement to build or expand a fossil-fuel-fired generation facility, or to enter into an agreement to purchase capacity or energy from such a facility for a term exceeding five years, be considered as a supply option for the generation facility, and the commission shall ensure such consideration and take any action with respect to such supply proposal that it deems to be in the best interest of ratepayers ... .[14]

[14] Minn. Stat. § 216B.1694.

Statement of Need

20. The Certificate of Need Application describes the Company's forecast of future electricity needs. Xcel Energy's forecast indicates that the Company will need additional resources to meet its power supply obligation beginning in Summer 2005.[15] The Company forecasts capacity deficits in 2005 of 501 MW, in 2006 of 255 MW, in 2007 of 188 MW, and in 2008 of 282 MW.[16] The power supply obligation is comprised of peak customer demand and reserve capacity requirements for Summer 2005.[17] The additional generating capacity of the Project would ensure that Xcel Energy can continue to reliably meet customer demand for electricity in its upper Midwest service territory.[18]

21. The Department conducted forecasting of future electricity needs in Xcel Energy's upper Midwest service territory. The Department's forecasting also anticipates that Xcel Energy will have an electrical generation capacity shortfall beginning in 2005.[19] The Department forecasts growing capacity deficits, but in amounts smaller than that forecast by Xcel Energy.[20] The Department's analysis concludes that the Company's application to construct a 320 MW, two-unit, natural gas combustion turbine facility should be approved.[21]

22. Demand for electrical power must be met instantaneously by an electric utility. Electricity cannot be effectively stored at the scale required to meet the scale of demand posed to utilities. Therefore, the instantaneous demand for power must be matched with equal capacity for electrical generation. Utilities must have adequate power plant capacity available to meet the demand for electricity under all circumstances as demand changes throughout the hour, day, week, and year. A utility must also keep some generating capacity on-line and unloaded at all times. This spare capacity is needed to respond to system disturbances (e.g., forced outages) while maintaining reliable service. A utility cannot forecast demand in any period exactly. Due to this uncertainty, utilities plan to have extra generating plant capacity to compensate for load uncertainty, to meet the capacity margin required to cover power

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[15] PUC Exhibit 1, at 5-1 to 5-18.

[16] PUC Exhibit 1, Figure 5-4.

[17] PUC Exhibit 5, Direct Testimony of David L. Eves, at 5-6.

[18] PUC Exhibit 5, at 13-14.

[19] PUC Exhibit 14, Direct Testimony of Hwikwon Ham, at 9; PUC Exhibit 16, Direct Testimony of Stephen Rakow, at 6.

[20] PUC Exhibit 15, Direct Testimony of Stephen Rakow, at 7.

[21] PUC Exhibit 15, at 52.

plant, and transmission line outages that might occur, and to provide the operating reserves needed to reliably operate a utility system.[22]

23. Utilities in the upper Midwest have agreed to share resources to meet emergency conditions. As a result, there are fewer power plants required in the region to meet these uncertainties than otherwise would be the case if each utility provided its own spare capacity. Participating utilities arrange this resource sharing through the Mid-Continent Area Power Pool ("MAPP").[23] Xcel Energy is a member of MAPP.

24. MAPP members, including Xcel Energy, have contractually agreed to have sufficient generating resources or purchase power resources in an amount equal to the member's monthly peak electrical demand plus an additional 15 percent generating capacity reserve.[24] The total of the member's peak demand and 15% capacity reserve is that member's power supply obligation ("PSO").[25]

25. Xcel Energy meets its PSO through a combination of Company-owned generating facilities and short-term and long-term power purchases.[26] There are inherent uncertainties surrounding the procurement of adequate supply resources to meet Xcel Energy's ongoing statutory obligation to serve its customers.[27]

26. The Company has been having increasing difficulty securing adequate power supplies for Summer 2005 because less firm transmission is available than in the past, and because certain long-term resources, which the Company expected to come on-line in 2005, have been delayed.[28]

27. In its Application, Xcel Energy projected a deficit of approximately 500 MW of production capacity commencing in the Summer of 2005.[29]

28. The Department calculates that the Company will have a capacity deficit for 2005 of 204 MW, with that deficit growing over time.[30] The Department further

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[22] PUC Exhibit 5, at 5.

[23] *Id.*

[24] PUC Exhibit 5, at 5-6.

[25] *Id.*

[26] PUC Exhibit 5, at 7.

[27] PUC Exhibit 15, at 9-12, 35-37, and 39; PUC Exhibit 9, Rebuttal Testimony of David L. Eves, at 3-5.

[28] PUC Exhibit 5, at 7.

[29] PUC Exhibit 1, Figure 5-4.

discussed a number of uncertainties that could result in the capacity deficit being much larger.

29. The proposed addition of 320 MW of electrical generation capacity at the Blue Lake Generating Plant in Shakopee, Minnesota is intended to relieve part of this deficit.[31]

30. By building the Project within the Twin Cities Metro Area, Xcel Energy is likely to be better able to obtain transmission service. Midwest Independent System Operator ("MISO") is currently conducting the system impact studies to determine whether any system modifications are needed to enable delivery. In addition, Xcel Energy has had transmission studies performed that confirm its ability to add the proposed generation with only minimal transmission improvements.[32]

The Proposed Blue Lake Generating Plant and Transmission Line Additions

31. The Blue Lake Generation Plant currently consists of four simple-cycle, fuel oil-fired CTGs. Existing plant structures also include an office building, turbine building and stacks, storage buildings, fuel tanks and transmission towers.[33]

32. Xcel Energy proposes to install two new natural gas-fired CTGs adjacent to the existing CTGs within the existing plant area, between the existing turbine building and the fuel tanks, on an area that has been previously graded flat and covered with gravel. The new CTGs will be between 50 and 75 feet tall.[34]

33. Xcel Energy also proposes to construct a 230/115 kV double-circuit transmission line approximately 4,000 feet long.[35]

34. If the two new proposed generators are approved, additional transmission capacity will be required to support the system at the Blue Lake Substation. Xcel Energy proposes to increase the capacity of the system at Blue Lake by connecting the substation to the nearest transmission line that does not currently enter the site, the Black Dog to McCleod County 230 kV transmission line.[36]

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[30] PUC Exhibit 15, at 7-8.

[31] PUC Exhibit 5, p. 7.

[32] PUC Exhibit 5, p. 13.

[33] PUC Exhibit 1, at 3-3.

[34] PUC Exhibit 1, at 3-3.

[35] PUC Exhibit 1, at 3-1, 3-2; PUC Exhibit 8, Direct Testimony of Pamela Rasmussen, at 4.

[36] PUC Exhibit 7, Direct Testimony of Steven LaCasse, at 3-4.

35. To provide natural gas fuel to the Plant, Xcel Energy intends to build a 16-inch diameter high-pressure natural gas pipeline to connect the Plant to a regional gas supply pipeline located approximately ten miles south of the plant.[37] A separate Certificate of Need is not required for the new pipeline facilities, but a routing permit is required. Xcel Energy submitted its routing application to the MEQB on March 16, 2004. That proceeding will proceed independently and no decision needs to be made in this proceeding regarding the natural gas pipeline or natural gas delivery.

Application of Rule and Statutory Criteria

Minn. Rule 7849.0120 (A): Would the probable result of denial of the Certificate of Need to Xcel Energy be an adverse effect upon the future adequacy, reliability and efficiency of energy supplied to Xcel Energy, to Xcel Energy's customers, or to the people of Minnesota and neighboring states?

36. If the probable result of denial would be an adverse effect upon the future adequacy, reliability or efficiency of energy supplied to Xcel Energy, its customers, or residents of Minnesota and neighboring states, a Certificate of Need must be issued. In assessing this issue, the following factors are considered:

> (1) the accuracy of the applicant's forecast of demand for the type of energy that would be supplied by the proposed facility;
>
> (2) the effects of the applicant's existing or expected conservation programs and state and federal conservation programs;
>
> (3) the effects of promotional practices of the applicant that may have given rise to the increase in the energy demand, particularly promotional practices which have occurred since 1974;
>
> (4) the ability of current facilities and planned facilities not requiring certificates of need to meet the future demand; and
>
> (5) the effect of the proposed facility, or a suitable modification thereof, in making efficient use of resources .... [38]

Each of these factors is discussed below.

Accuracy of the Forecast of Demand for the Type of Energy Supplied by the Facility

37. Xcel Energy presented its current forecast for the Company's PSO in its Application and in the direct testimony of James R. Alders, Manager, Regulatory

[37] PUC Exhibit 1, at 3-5.

[38] Minn. Rule 7849.0120 (A).

Projects, Governmental and Regulatory Affairs Department, Xcel Energy Services Inc.[39] The Company's forecast, when combined with available resources, shows a capacity deficit in 2005.

38. **The** Department disagreed with the validity of some of Xcel Energy's inputs and method for forecasting demand.[40] The Department prepared its own forecast and the Department's resulting analysis identifies a capacity deficit of 204 MW in 2005.[41]

39. The Department's testimony recognizes shortfalls in supply of electricity available to meet reasonably anticipated demand as contributing factors to the Department's recommendation.[42]

40. The Department noted that Xcel Energy used the uniform rating of generating equipment ("URGE") test capacity ratings. URGE ratings identify the capacity of a generation unit based on a one-hour or four-hour test. This is the standard methodology used by MAPP. The URGE rating is different than the maximum dependable capacity ("MDC"), which is the net output from a unit that can be expected during normal operations. The Department's analysis focused, in part, on the difference between the URGE capacity of the Xcel Energy generation resources and the MCD capacity.[43]

41. The Company agreed with the Department that it is appropriate to focus on more conservative ways to calculate capacity, particularly in light of the increasing difficulties recently encountered in importing energy.[44] The Company proposed to work with the Department to study the methods for calculating capacity and the implications of transmission constraints.

42. The Department's analysis confirmed further risks of significant shortfalls in power acquisitions due to multiple uncertainties. One of the uncertainties is the timing of the replacement of equipment and upgrades to the High Bridge, Riverside and Allen S. King plants as part of the Metro Emissions Reduction Proposal, Docket No. E002/M-02-633 ("MERP"). It is unknown whether the planned improvements can be completed as scheduled and it is unknown how long the older units will be off-line before the new units are operational. Another uncertainty is the capacity from Manitoba

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[39] PUC Exhibit 1, Figure 5-1; PUC Exhibit 4, at 8-9.

[40] See generally, PUC Exhibit 14.

[41] PUC Exhibit 15, at 7-8.

[42] Tr. at 58-62.

[43] PUC Exhibit 15, at 8.

[44] PUC Exhibit 9, at 5.

Hydro, a significant supplier to Xcel Energy. A drought over the past few years raises questions about whether Manitoba Hydro can meet its short-term contractual obligations. Additionally, there are significant uncertainties relating to the Company's all-source acquisitions for long-term capacity as well as short-term power purchases. Finally, the Department noted there is uncertainty about whether the new unit at Angus Anson will be able to serve needs due to its distance from the Twin Cities load center.[45]

43. The Department concluded that the Company's "current supply-side schedule cannot be reasonably expected to cover the projected deficits."[46]

44. The record demonstrates that Xcel Energy's existing resources cannot meet its reasonably forecast PSO. Department and the Applicant agree that there is an actual need for the proposed facilities, differing only in the extent of the electrical generating capacity deficit. More conclusive findings on the accuracy of the competing forecasts are unnecessary to arriving at a recommendation in this matter.

45. The ALJ notes that the Company and the Department's demand forecasts diverged in several respects. Since both the Company and the Department find a net capacity deficit, it is not necessary to pick either forecast or resolve the differences between them. Both the Department and Xcel Energy acknowledged the benefit of conferring to discuss forecasting issues prior to the next resource plan filing. The Company stipulated to such a process and agreed to accept as a condition of its Certificate of Need that it meet to discuss the Department's concern with Xcel Energy's demand forecast.

Effects of Conservation Programs

46. The Company fully analyzed whether Demand Side Management (DSM) could obviate the need. While the Company aggressively pursues DSM goals as identified in the Commission's 2000 Resource Plan, DSM cannot achieve the reduction in demand necessary to obviate the need for the new facilities. The current DSM program has been achieving a 50-100 MW demand reduction annually. It is not practical to expect that a sufficient reduction could be achieved through DSM by the Summer of 2005. Because of the immediacy of the need, and the reductions achieved through DSM historically, this approach is not a reasonable alternative.[47]

47. The Department concurred that Xcel Energy has operated a good DSM program and that further expansion to meet the identified need is not economically efficient.[48]

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[45] PUC Exhibit 15, at 9-11.

[46] PUC Exhibit 15, at 11-12.

[47] PUC Exhibit 4, at 5-6.

[48] PUC Exhibit 16, at 22.

Effects of Promotional Practices

48. Xcel Energy has not engaged in promotional activities leading to the forecasted demand. The current forecast takes into account the peak demand that can be avoided through conservation and load management capabilities.[49]

Ability of Current Facilities and Planned Facilities Not Requiring Certificates of Need to Meet Future Demand

49. The Company requires significant generation resources to meet its PSO. Because of constraints on the transmission system, the Company is unable to purchase the supplies in the amount and at the time that those supplies are needed. The Department agreed with the Company that transmission facilities do not by themselves provide energy or capacity.[50] The record demonstrates that the Company cannot meet its reasonably forecast PSO through the use of current facilities or planned facilities not requiring a Certificate of Need.

50. The Company requires additional transmission infrastructure to support the new generation. The deficit in transmission capacity cannot be met by reconductoring existing lines or adding additional transformers. A new line is necessary to provide the needed outlet capacity in a reliable, efficient manner and therefore a new 230 kV /115 kV line is needed.[51]

51. Existing and planned facilities cannot meet the identified need.

The Effect of the Facility (or a Suitable Modification) in Making Efficient Use of Resources

52. The Project involves expansion of an existing generation station that enables Xcel Energy to maximize existing infrastructure within the Plant footprint. The Project utilizes the existing Plant substation with some modification and minimal new transmission infrastructure.[52] Accordingly, the Project makes efficient use of existing resources.

Minn. Rule 7849.0120 (B): Has a More Reasonable and Prudent Alternative to the Proposed Facility Been Demonstrated by a Preponderance of the Evidence on the Record?

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[49] PUC Exhibit 1, at 5-3.

[50] PUC Exhibit 15, at 23.

[51] PUC Exhibit 7, at 4.

[52] PUC Exhibit 1, at 7-3.

53. A Certificate of Need cannot be issued if a more reasonable and prudent alternative to the proposed Project is demonstrated by a preponderance of the evidence on the record. The factors to be considered in assessing alternatives are:

a. appropriateness of the size, the type, and the timing of the proposed facility compared to reasonable alternatives;

b. cost of the proposed facility and the cost of energy to be supplied by the proposed facility compared to those of reasonable alternatives;

c. effects of the proposed facility upon the natural and socioeconomic environments compared to those of reasonable alternatives; and

d. reliability of the proposed facility compared to the expected reliability of reasonable alternatives.[53]

Renewable Alternatives to the Proposed Project

54. Xcel Energy and the Department independently explored the possibility of generating power by means of renewable energy resources and both concluded that there is no reasonable renewable alternative that would meet the Project objectives.[54] Those objectives are:

- Applicability—Meet Xcel Energy's demand during peak consumption periods and its associated reserve capacity requirements.
- Availability—Provide a facility that is commercially proven at the several-hundred megawatt scale that can be available for the 2005 summer peak season.
- Reliability—Enhance the reliability of the bulk electric system by ensuring Xcel Energy can meet its reserve capacity obligation.
- Environmental Impacts—Minimizes environmental and community impacts by leveraging existing generation infrastructure and using efficient and environmentally-friendly technology.
- Cost and Economic Effects—Enhance ratepayer value and reduce ratepayer risk by implementing the lowest cost feasible alternative and leveraging

[53] Minn. Rule 7849.0120(B).

[54] PUC Exhibit 1, at 6-3; PUC Exhibit 15, at 12-18.

existing generation infrastructure, and provide economic benefit to the area community.[55]

55. Hydropower was eliminated from consideration due to its long lead time.[56] Additionally, the Department concluded that there is no single hydro generation site in Minnesota greater than 50 MW in capacity.[57]

56. Wind generated power is not a good solution for the identified peaking service need because wind is an intermittent or variable resource. Therefore it cannot be counted on to be available to produce power on demand to meet peaking needs.[58]

57. Solar generated power cannot satisfy the need because it is much more costly and, like wind, not dispatchable.[59]

58. Biomass projects are not acceptable because they typically require long lead times and involve a significant amount of project development uncertainty and thus cannot be placed in service in time to meet the Summer 2005 peak season.[60]

59. No potential landfill gas-fired generation sites have been identified that would be large enough to meet the Project's primary objectives.[61]

60. Geothermal energy fails as an alternative because there is no evidence of any utility-scale geothermal sites in Minnesota or the MAPP region.[62]

61. The Company provided general cost comparison information regarding various renewable technologies.[63] Xcel Energy and the Department both concluded that no feasible renewable energy alternative existed.[64]

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[55] PUC Exhibit 1, at 6-3, 6-4.

[56] PUC Exhibit 1, at 6-13.

[57] PUC Exhibit 15, at 15.

[58] PUC Exhibit 5, at 14; PUC Exhibit 15, at 17.

[59] PUC Exhibit 5, at 14; PUC Exhibit 16, at 17.

[60] PUC Exhibit 5, p. 14; PUC Exhibit 15, at 17.

[61] PUC Exhibit 1, p. 6-13.

[62] PUC Exhibit 16, at 14.

[63] PUC Exhibit 1, Table 6-5.

[64] PUC Exhibit 15, at 12-18.

62. The Administrative Law Judge finds that the Company fully explored the possibility of a renewable energy source alternatives. The Administrative Law Judge finds that the identified needs cannot be met by use of generating power fueled by renewable resources and therefore detailed cost comparisons between renewable and non-renewable resources is not required in this Certificate of Need proceeding.

Consideration of Innovative Energy Projects

63. Xcel Energy and the Department considered whether an innovative energy project as described in Minnesota Statute § 216B.1694 could meet the identified need. Specifically, the Company gave consideration to an integrated coal-gasification, combined cycle power plant project, 1,000 to 2,000 megawatts in size. Such a project is being discussed in the context of being a baseload facility rather than a peaking facility. Additionally, an integrated coal-gasification, combined cycle plant and the necessary transmission infrastructure could not be implemented by Summer 2005. Accordingly, this option is not a viable alternative.[65]

Appropriateness of the Size, Type and Timing of the Non-Renewable Alternatives

64. In addition to renewable alternatives, the Company and the Department considered fossil fuel and other technologies to meet the calculated deficit.

65. A coal facility is not an available alternative because it is not of the appropriate type; a coal facility could not meet Xcel Energy's energy demand and associated reserve requirements during peak demand. Additionally, a coal facility of the size proposed could not be constructed in time for the Summer 2005 season and would be prohibitively expensive. The complexity of combined cycle plants and associated permitting and construction made commercial viability of this option for Summer 2005 unachievable.[66] These would be substantially more expensive options for peaking service.

66. The Company and the Department analyzed the use of a fuel oil-fired, simple cycle combustion turbine generator. The Department recognized that this technology could meet the peaking and capacity objectives, but could not meet the timing objective of being in-service by Summer 2005.[67]

67. The fuel oil-fired alternative cannot meet the timing requirements because of additional emissions created by fuel oil. The construction period for both the natural gas-fired and the fuel oil-fired CTGs would be about 9 months. The initial start-up time for the natural gas fired CTGs would be approximately two weeks and the fuel-oil

[65] PUC Exhibit 2, at 5-6; PUC Exhibit 15, at 18-19.

[66] PUC Exhibit 1, at 6-10, 6-11; PUC Exhibit 15, at 25.

[67] PUC Exhibit 4, at 6; PUC Exhibit 15, at 25.

alternative would be approximately four weeks. The fuel-oil units could not, however, be placed in service by Summer 2005 because of permitting requirements. It is likely that the fuel oil-fired alternative would require a full Prevention of Significant Deterioration review which would delay construction for months, up to a year.[68]

68. The Department's and Xcel Energy's analyses found that a fuel oil-fired alternative was more expensive.[69]

69. Other technologies, including fuel cells, microturbines and several energy storage technologies were also considered. The fuel cell and microturbine technologies cannot economically meet the Project's objectives. Energy storage is not viable because this technology requires a system with excess or underutilized and economical generating capacity to charge the storage system.[70]

70. The Company and the Department concluded that a natural gas-fired combustion turbine was the most reasonable alternative and considered both the combined-cycle and simple-cycle configurations. The combined-cycle configuration was eliminated because projects typically take a longer time frame to build and because that technology did not fit well with the resource need when viewed in combination with other resources, which already included other combined cycle plants. The complexity of the combined cycle technology and construction and permitting requirements made a 2005 in-service date unachievable. Additionally, combined cycle power plant requires considerable more capital investment and thus would be a more expensive way to meet a peaking capacity need.[71]

71. Both the Department's and the Company's analyses showed that the proposed simple-cycle technology is uniquely suited to meet the peaking capacity needs because of its relatively low capital cost and operational flexibility, especially its ability to come on line quickly. This technology is also a well-tested and reliable technology at this scale. This peaking facility is expected to operate only at a two to eight percent capacity factor, thereby minimizing its use of natural gas and minimizing adverse environmental impacts. Moreover, this alternative is best able to meet a Summer 2005 in-service date because it has a nine-month construction time.[72]

72. Both the Department's and the Company's analyses showed that the proposed natural gas combustion turbines are particularly well suited for peaking service because they can be brought quickly on line (within approximately 40 minutes),

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[68] PUC Exhibit 5, at 15.

[69] PUC Exhibit 1, Appendix D; PUC Exhibit 15, at 42, 50.

[70] PUC Exhibit 1, at 6-14.

[71] PUC Exhibit 5, at 15; PUC Exhibit 15, at 24-26.

[72] PUC Exhibit 4, at 7.

and will run only for a limited number of hours per year, providing cost-effective capacity. Additionally, these gas turbine facilities can be built in a relatively short amount of time allowing for the Summer 2005 start time.

Cost of Proposed Facility and Energy Compared to Reasonable Alternatives

73. The total capital costs of the Project are estimated to be $97,200,000.[73] The total cost per kilowatt-hour (kWh) of energy is estimated at 11.6 cents (using 2003 dollars).[74]

74. The total cost of the natural gas-fired CTGs is less than the total cost of the fuel oil-fired CTGs. The costs are estimated by Xcel Energy to be $97,200,000 for the natural gas-fired simple cycle turbine and $122,400,000 for the fuel oil fired-simple cycle turbine.[75]

75. When comparing the total proposed costs of the Project against those of the fuel oil alternative through 2020 using the most recent update for the Commission's environmental externality values, both the Department and the Company determined that the Project is less costly. The Department determined that the total private cost of the natural gas alternative is 11.56 cents per kWh. The oil-fired alternative is .95 cents higher, 12.51 cents per kWh.[76]

Effects of the Proposed Facility Upon the Natural Environment Compared to the Effects of Reasonable Alternatives

76. The Commission requires that facility effects on the natural and socioeconomic environments be captured in the cost estimates for the facility and its alternatives.[77] Using the values published by the Commission for those externalities, the Department calculated the low externality cost as being 0.03 cents per kWh for the natural gas alternative and 0.04 cents per kWh for the fuel oil alternative.[78]

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[73] PUC Exhibit 1, Table 3-2.

[74] PUC Exhibit 16, p. 3.

[75] PUC Exhibit 1, Table 6-10.

[76] PUC Exhibit 15, at 50.

[77] PUC Exhibit 15, at 47.

[78] PUC Exhibit 15, at 49.

77. The Department calculated the high externality cost as being 0.26 cents per kWh for the natural gas alternative and 0.25 cents per kWh for the fuel oil alternative.[79]

78. The Department calculated the total cost of the proposed facility at 11.59 cents per kWh at low externalities and 11.82 cents per kWh at high externalities.[80]

79. The Department calculated the total cost of the fuel-oil alternative at 12.55 cents per kWh at low externalities and 12.76 cents per kWh at high externalities.[81]

80. The MEQB's Environmental Assessment demonstrates that the Project results in the least adverse impacts on the natural environment when compared to feasible alternatives.[82]

81. Natural gas combustion generates significantly less particulate matter, sulfur dioxide, and toxic air emissions (including mercury) than combustion of fuel oil or coal.[83]

82. The proposed transmission facilities upgrade will also minimize impacts by utilizing existing infrastructure to provide additional transmission capacity.

The Expected Reliability of the Proposed Facility Compared to Reasonable Alternatives

83. There is no dispute between the parties that both the natural gas fueled alternative and fuel oil alternative would both reliably serve Xcel Energy's customers.[84]

Minn. Rule 7849.0120 (C): Has it been shown by a preponderance of the evidence on record, that the proposed facility, or a suitable modification of the facility, will provide benefits to society in a manner compatible with protecting the natural and socioeconomic environments, including human health?

84. The Assessment of Need Criteria set forth in Minn. Rule 7849.0120(C), requires a determination that, by a preponderance of the evidence on the record, the Project will provide benefits to society in a manner compatible with protecting the

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[79] PUC Exhibit 15, at 49.

[80] PUC Exhibit 15, at 50.

[81] *Id.*

[82] PUC Exhibit 19, at 13-33.

[83] PUC Exhibit 1, p. 4-1.

[84] PUC Exhibit 1, at 6-21.

natural and socioeconomic environments, including health, and specifically considering the following:

a. the relationship of the proposed facility to overall state energy needs;

b. comparison of the effects of the proposed facility upon the natural and socioeconomic environments as opposed to not building the facility;

c. effects of the proposed facility in inducing future development; and

d. socially beneficial uses of the output of the proposed facility, including its uses to protect or enhance environmental quality ... .[85]

The Relationship of the Proposed Facility to Overall State Energy and Capacity Needs

85. The Department's publication *Energy Policy and Conservation Report 2000* identified state energy policy goals. This Project serves several of these goals including: improving long-term electrical system reliability; building most cost effective, least environmentally damaging resource; being in a position to take advantage of existing transmission infrastructure capacity to ensure greater reliability of the system and providing a resource that will ensure affordable energy for all Minnesotans. Existing infrastructure, including site improvements and substation and transmission facilities will be utilized.[86] This aspect of the Project also serves the State's goal of non-proliferation of transmission corridors.[87] Further, the proposed natural gas-generating facility will advance the legislative preference for natural gas sources of energy over the use of coal.[88]

86. The Department concluded that the construction of these two CTGs will have a minimal impact upon the reliability of natural gas supply as well as limited price implications for natural gas in Minnesota.[89] The units are expected to operate between a two and eight percent annual capacity factor, depending on demand and other factors. The two units will be limited to a total of about 1,400 unit hours per year because of air

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[85] Minn. Rule 7849.0120(C).

[86] PUC Exhibit 4, at 7-8.

[87] ***People for Environmental Enlightenment and Responsibility (PEER) v. Minnesota Environmental Quality Council***, 266 N.W.2d 858 (Minn. 1978).

[88] Minn. Stat. § 216C.051, subd. 7(c)(d).

[89] PUC Exhibit 12, Direct Testimony of Jason Bonnett, at 17-18.

permitting constraints. As a result the impact on overall natural gas prices and supply is most likely insignificant.[90]

87. The Company maintains that the proposed Project will meet or exceed the requirements of all applicable federal and State environmental laws and regulations. There is no evidence in the record to suggest that the Company will not comply with all applicable environmental laws and regulations.

Effect of Facility on Natural and Socioeconomic Environment Compared to Not Building the Facility

88. If the proposed Project is not approved, the Company could experience a significant electrical generating capacity deficit in 2005. This deficit cannot reasonably be met by other means.[91]

89. The proposed Project will generate approximately $8 million in payroll in the regional economy through the construction of the Facilities.[92] This benefit would not occur if the proposed Project were not built.

Effects of the Facility in Inducing Future Development

90. The Project will not directly induce future development. Xcel Energy historically has maintained low electric rates compared to utilities in of the regions of the United States. As a result, Minnesota has been able to remain competitive with other regions in fostering development. The Project will allow Xcel Energy to maintain favorable rates to support further development in Minnesota and surrounding states.[93]

Socially Beneficial Uses of the Facility, Including to Protect or Enhance Environmental Quality

91. The Project will generate the least air emissions and the least impact to ambient air quality of all feasible alternatives to meet the Project's objectives.[94]

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[90] PUC Exhibit 5, at 16-17.

[91] PUC Exhibit 1, filing letter, at 1-8.

[92] PUC Exhibit 1, at 7-4.

[93] PUC Exhibit 1, at 7-5.

[94] PUC Exhibit 1, at 7-4.

Rule 7849.0400 (D): Whether the proposed Project will comply with policies, rules and regulations

92. The Assessment of Need Criteria set forth in Minn. Rule 7849.0120(D) require a finding that the record does not demonstrate that the design, construction, or operation of the proposed facility, or a suitable modification of the facility will fail to comply with relevant rules, policies and regulations or other state and federal agencies and local governments.

93. Xcel Energy has committed that the Project will meet or exceed the requirements of all applicable federal and state environmental laws and regulations.[95]

94. There is no evidence in the record that the design, construction or operation of the Project will fail to comply with relevant policies, rules and regulation of other state and federal agencies and local governments. The granting of a Certificate of Need will not conflict with any regulatory requirements.

95. The Parties have agreed to waive the right to file exceptions as provided by Minn. Stat. § 14.61 and the Commission's rules of practice.

Based on the foregoing Findings of Fact, the Administrative Law Judge makes the following:

CONCLUSIONS

1. Any of the Findings of Fact that more properly should be designated as conclusions of law are adopted as such.

2. The Commission has jurisdiction over this matter pursuant to Minn. Stat. §§ 216B.08, 216B.243 and 216B.2401.

3. All notice requirements have been complied with, including Minn. Rules 7829.2500, subps. 3 and 5, 7849.0200, subp. 2, and 7849.0230, subp. 1.

4. All relevant substantive and procedural requirements of law and rules have been fulfilled.

5. The proposed two new combustion turbine generators and a new 230 kV/115 kV double-circuit transmission line are needed to meet the power supply obligations of Xcel Energy.

6. Increasing planned conservation efforts is not a feasible alternative to the Project.[96]

[95] PUC Exhibit 1, at 8-3.

7. Xcel Energy has not promoted electricity in a manner that would affect the need for the proposed generators.[97]

8. The current and planned facilities not requiring Certificates of Need are inadequate to meet the projected needs.

9. The proposed combustion turbine generators and double-circuit transmission line will make efficient use of resources.

10. Denial of the Certificate of Need would likely have an adverse effect upon the future adequacy, reliability and efficiency of energy supply to Xcel Energy customers in the Twin Cities service area.[98]

11. Considering the size, type, timing, costs, natural and socioeconomic environmental effects, and reliability, a more reasonable and prudent alternative to the proposed new combustion turbine generators and double-circuit transmission line has not been demonstrated by a preponderance of the evidence on the record.[99]

12. The proposed generators and transmission line will provide benefits to society in a manner compatible with protecting the natural and socioeconomic environments, including human health.[100]

13. The record does not demonstrate that the design, construction, or operation of the generators and transmission line will fail to comply with the relevant policies, rules and regulations of other state and federal agencies and local governments.[101]

14. Xcel Energy has satisfied all the requirements for a Certificate of Need set forth a Minn. Stat. § 216B.243 and Minn. Rules Ch. 7849.

THIS REPORT IS NOT AN ORDER AND NO AUTHORITY IS GRANTED HEREIN. THE MINNESOTA PUBLIC UTILITIES COMMISSION WILL ISSUE THE ORDER OF AUTHORITY WHICH MAY ADOPT OR DIFFER FROM THE FOLLOWING RECOMMENDATION.

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[96] Minn. Stat. §216B.342, Subd. 3(2) and 3(8); Minn. Stat. § 216B.2422, Subd. 4 and §216B.243, Subd. 3(a).

[97] Minn. Stat. § 216B.243, Subd. 3(4).

[98] Minn. Rule 7849.0400, Subd. 2(A).

[99] Minn. Rule 7849.0400, Subd. 2 (B).

[100] Minn. Rule 7849.0400, Subd. 2(C).

[101] Minn. Rule 7849.0400, Subd. 2(D).

Based on the foregoing Conclusions, the Administrative Law Judge makes the following:

RECOMMENDATION

That a Certificate of Need be issued to Applicant Xcel Energy to construct two simple cycle, natural gas-fired, combustion turbine generators at the Blue Lake Generating Plant and a 230/115 kV double circuit transmission line connecting the Blue Lake Generating Plant to an existing 230 kV line between the Black Dog and McCleod County substations. Issuance of this Certificate of Need should be conditioned upon Xcel Energy agreeing to meet with the Department to discuss forecasting issues prior to Xcel Energy's next resource plan filing.

Dated this _28__ day of May, 2004.

/s/ Raymond R. Krause
RAYMOND R. KRAUSE
Chief Administrative Law Judge